MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

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FINAL EXAMINATION

TRIMESTER 3, 2022/2023

BKC2044 – KNOWLEDGE COMMERCE

(All sections / Groups)

6 OCTOBER 2023
9:00 a.m. – 11:00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 3 pages with 5 Questions only.
2. Attempt **ALL** questions in Section A and B. The distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

This new generation of robots will bring changes to the factory floor and perhaps the global competitive landscape. The Boston Consulting Group predicts that by 2025 the share of tasks performed by robots will rise from a global average of about 10 percent across all manufacturing industries to about 25 percent. In some industries, robots could perform more than 40 percent across all manufacturing tasks. There will be dramatic productivity gains in many industries around the world (potentially boosting output per worker by 30 percent) and shifts in competitiveness among manufacturing countries.

Does this mean that robots will take over the production line? Not at this point. They still lack the flexibility, delicacy, and insight provided by humans. For example, today's collaborative robots often have to slow down or stop whenever people veer into their paths, disrupting production. Sales have been disappointing for Baxter, a two-armed collaborative robot from Rethink, which is used primarily for simple tasks such as moving materials, picking up parts, and packing or unpacking boxes. The robot's speed is restricted by safety considerations. For all their recent advances, robots still can't duplicate a human being's fine motor skills in manipulating materials and small parts. Robots still have trouble dealing with soft or floppy material, such as cloth or bundles of electrical wire.

Although robots are good at reliably and repeatedly performing defined tasks, they're not yet good at adapting. Mercedes-Benz had to cut back on it use of robots on the production line because the level of customization demanded by its customers requires a level of flexibility and dexterity that only humans can provide. Today's Mercedes customer wants to configure his or her own car, choosing among customization options such as carbon - fiber trim, four types of tire valve caps, and heated and cooled cup holders for 30 different models. Robots can't deal with the amount of variation in options that Mercedes cars have today.

Mercedes has found that if manufacturing focuses around a skilled crew of workers, it can shift a production line in a weekend. It would take weeks to reprogram robots and shift assembly patterns, and during that downtime, production would be at a standstill. Going forward, robots won't completely disappear from the Mercedes factory floor, but they'll be smaller and more flexible, operating alongside human workers.

As robots become more widespread, manufacturing tasks performed by humans will become higher-level and more complex. Workers will be expected to supervise and perhaps even program robots, and there will be fewer low-level manufacturing jobs. Workers will need more sophisticated skills to succeed in tomorrow's manufacturing plants.

Sources: Jack Hough, "Rise of the Robots," Barrons, March 4, 2017; Bloomberg, " Why Mercedes Is Halting Robots' Reign on the Production Line," Industry Week, February 25, 2016.

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QUESTION 1

(a) Discuss why robots are used in manufacturing? (10 marks)

(b) Identify and discuss **FIVE (5)** types of knowledge a roboticist requires. (10 marks)

(Total: 20 marks)

QUESTION 2

(a) In your opinion, can robots replace human workers in manufacturing? Justify your answer with proper arguments. (5 marks)

(b) List **FIVE (5)** advantages of substituting human with robot. (20 marks)

(Total: 25 marks)

QUESTION 3

If you were considering introducing robots in your manufacturing plant, what issues on people, organisation and technology you need to address?

(15 marks)

(Total: 15 marks)

SECTION B: Structured Questions (40 marks)

QUESTION 4

Define **SEVEN (7)** types of Strategic Levers with key activities and give an example of each lever.

(20 marks)

QUESTION 5

To make a sustainable business, it is important to have good ideas in commercializing knowledge effectively. Explain **FIVE (5)** stages of knowledge commercialization for a successful knowledge business.

(20 marks)

(Total: 40 marks)

End of Paper